

LISTING OF THE CLAIMS

1. (Currently Amended) A method for identifying a single nucleotide polymorphism in a target ~~in an isothermal target amplification reaction~~, said method comprising:
 - a) hybridizing a detector primer to the target, wherein the detector primer comprises a diagnostic nucleotide for the single nucleotide polymorphism, said diagnostic nucleotide located about two to four nucleotides 5' of the 3' nucleotide of the detector primer which is complementary to the target sequence;
 - b) amplifying the target by hybridization and extension of the detector primer in an isothermal target amplification reaction;
 - c) determining an efficiency of detector primer extension is greater, lesser or equal to the efficiency of extension of a detector primer without said diagnostic nucleotide; and
 - d) detecting the presence or absence of the single nucleotide polymorphism based on the efficiency of detector primer extension.
2. (Cancelled)
3. (Previously Presented) The method of Claim 1 wherein the single nucleotide polymorphism is identified using multiple detector primers, each comprising a different diagnostic nucleotide.
4. (Previously Presented) The method of Claim 3 wherein two detector primers are used to identify which of two possible single nucleotide polymorphisms is present in the target sequence.
5. (Previously Presented) The method of Claim 3 wherein four detector primers are used to identify the single nucleotide polymorphism.
6. (Original) The method of Claim 3 wherein each of the multiple detector primers has a different 5' tail sequence.
7. (Original) The method of Claim 1 wherein the detector primer further comprises a nucleotide which forms a nondiagnostic mismatch with the target sequence.

8. (Original) The method of Claim 7 wherein the nondiagnostic nucleotide is positioned within fifteen nucleotides of the diagnostic nucleotide in the detector primer.
9. (Original) The method of Claim 8 wherein the nondiagnostic nucleotide is positioned 1-5 nucleotides from the diagnostic nucleotide in the detector primer.
10. (Original) The method of Claim 9 wherein the nondiagnostic nucleotide is adjacent to the diagnostic nucleotide in the detector primer.
11. (Original) The method of Claim 7 wherein the detector primer is about 15-36 nucleotides long.
12. (Original) The method of Claim 11 wherein the detector primer is about 18-24 nucleotides long.
13. (Previously Presented) The method of Claim 1 wherein the amplification reaction is selected from the group consisting of Strand Displacement Amplification (SDA), Self-Sustaining Sequence Replication (3SR), Nucleic Acid Based Amplification (NASBA), and Transcription Mediated Amplification (TMA).
14. (Original) The method of Claim 1 wherein the detector primer is about 12-50 nucleotides long.
15. (Original) The method of Claim 14 wherein the detector primer is about 12-24 nucleotides long.
16. (Original) The method of Claim 15 wherein the detector primer is about 12-19 nucleotides long.
17. (Previously Presented) The method of Claim 1 wherein the presence or absence of the single nucleotide polymorphism is detected by means of a label attached to the detector primer.

18. (Original) The method of Claim 17 wherein the label becomes detectable upon extension of the detector primer or produces a change in signal upon extension of the detector primer.

19. (Previously Presented) The method of Claim 18 wherein the label is a fluorescent donor/quencher dye pair and a decrease in donor dye fluorescence is detected as identifying the presence of the single nucleotide polymorphism.

20. (Cancelled) The method of Claim 18 wherein the label is a fluorescent donor/quencher dye pair and a decrease in donor dye fluorescence is detected as an indication of the presence of the single nucleotide polymorphism.

21. (Original) The method of Claim 1 wherein the efficiency of detector primer extension is determined quantitatively.

22. (Previously Presented) The method of Claim 1 further comprising, prior to amplifying, displacing the hybridized detector primer from the target by extension of an upstream primer, and hybridizing the detection primer to the target.